Spencer Krieger

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POSITIONS HELD

June 2016 – present
PhD Student
University of Arizona, Computer Science
PhD Advisor: John Kececioglu

January 2014 – April 2016
Research Assitant
Brigham Young University, Chemistry and Biochemistry
Research Advisor: Roger Harrison

EDUCATION

August 2016 - Present
PhD in Computer Science
University of Arizona

April 2016
BS in Biochemistry
Brigham Young University
Computer Science minor

RESEARCH INTERESTS

Algorithms in bioinformatics (network biology, cell-signaling pathway analysis, shortest path in hypergraphs; structural bioinformatics, protein secondary structure prediction); personal medicine (genomics, personal genomics)

RESEARCH PROJECTS

Shortest Hyperpaths in Cell-Signaling Networks (2017-present, University of Arizona, Department of Computer Science) - Using hypergraphs to model cell-signaling pathways, we want to find the shortest path from a set of receptors to a set of transcription factors to aid biologists find proteins involved in pathways.

Protein Secondary Structure Prediction (2016-present, University of Arizona, Department of Computer Science) - We are developing a type of nearest-neighbor search classification with dynamic-programming to make an accurate, fast single-sequence protein secondary structure predictor.

Separation and Preconcentration of Pertechnetate From Nuclear Waste Using Ion Chromatography (2014-2016, Brigham Young University, Department of Chemistry and Biochemistry) - Using large macrocyclic molecules, we were able to separate pertechnetate, a common ingredient in cancer treatments, from nuclear reactor waste.

PAPERS

Spencer Krieger and John Kececioglu, "Secondary Structure Prediction Using Nearest Neighbor Search and Dynamic Programming" (In Preparation, 2017)

TALKS AND POSTERS

Separation of Pertechnetate From Nuclear Waste — Brigham Young University Spring Research Conference, March 19, 2016, Provo, UT

Selective Preconcentration of Perrhenate Using Ion Chromatography — Brigham Young University Spring Research Conference, March 21, 2015, Provo, UT

CONFERENCES ATTENDED

Intelligent Systems For Molecular Biology (ISMB), July 21-25, 2017, Prague, Czech Republic

ACM Conference on Bioinformatics and Computational Biology and Health Informatics (ACM-BCB), October 2-5, 2016, Seattle, WA